

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference B02-05005WO		FOR FURTHER ACTION	See Form PCT/IPEA/416																								
International application No. PCT/JP2004/011273	International filing date (day/month/year) 05.08.2004	Priority date (day/month/year) 06.08.2003																									
International Patent Classification (IPC) or national classification and IPC C01B39/02, B01D71/02, C01B39/14																											
Applicant BUSSAN NANOTECH RESEARCH INSTITUTE, INC.																											
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>3</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>																											
<p>4. This report contains indications relating to the following items:</p> <table><tr><td><input checked="" type="checkbox"/></td><td>Box No. I</td><td>Basis of the report</td></tr><tr><td><input type="checkbox"/></td><td>Box No. II</td><td>Priority</td></tr><tr><td><input type="checkbox"/></td><td>Box No. III</td><td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td></tr><tr><td><input type="checkbox"/></td><td>Box No. IV</td><td>Lack of unity of invention</td></tr><tr><td><input checked="" type="checkbox"/></td><td>Box No. V</td><td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td></tr><tr><td><input type="checkbox"/></td><td>Box No. VI</td><td>Certain documents cited</td></tr><tr><td><input type="checkbox"/></td><td>Box No. VII</td><td>Certain defects in the international application</td></tr><tr><td><input type="checkbox"/></td><td>Box No. VIII</td><td>Certain observations on the international application</td></tr></table>				<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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Date of submission of the demand		Date of completion of this report																									
Name and mailing address of the IPEA/JP		Authorized officer																									
Facsimile No.		Telephone No.																									

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/011273

Box No. I	Basis of the report
1.	<p>With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.</p> <p><input type="checkbox"/> This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:</p> <p><input type="checkbox"/> international search (Rule 12.3 and 23.1(b))</p> <p><input type="checkbox"/> publication of the international application (Rule 12.4)</p> <p><input type="checkbox"/> international preliminary examination (Rule 55.2 and/or 55.3)</p> <p>2. With regard to the elements of the international application, this report is based on <i>(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)</i>:</p> <p><input type="checkbox"/> the international application as originally filed/furnished</p> <p><input checked="" type="checkbox"/> the description:</p> <p>pages <u>1-20</u> as originally filed/furnished</p> <p>pages* _____ received by this Authority on _____</p> <p>pages* _____ received by this Authority on _____</p> <p><input checked="" type="checkbox"/> the claims:</p> <p>nos. _____ as originally filed/furnished</p> <p>nos.* _____ as amended (together with any statement) under Article 19</p> <p>nos.* <u>1, 4, 5, 7-11, 13-16, 18-20, 24</u> received by this Authority on <u>27.05.2005</u></p> <p>nos.* _____ received by this Authority on _____</p> <p><input checked="" type="checkbox"/> the drawings:</p> <p>sheets <u>fig. 1-18</u> as originally filed/furnished</p> <p>sheets* _____ received by this Authority on _____</p> <p>sheets* _____ received by this Authority on _____</p> <p><input type="checkbox"/> a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.</p> <p>3. <input checked="" type="checkbox"/> The amendments have resulted in the cancellation of:</p> <p><input type="checkbox"/> the description, pages _____</p> <p><input checked="" type="checkbox"/> the claims, nos. <u>2, 3, 6, 12, 17, 21-23</u></p> <p><input type="checkbox"/> the drawings, sheets/figs _____</p> <p><input type="checkbox"/> the sequence listing (specify): _____</p> <p><input type="checkbox"/> any table(s) related to sequence listing (specify): _____</p> <p>4. <input type="checkbox"/> This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).</p> <p><input type="checkbox"/> the description, pages _____</p> <p><input type="checkbox"/> the claims, nos. _____</p> <p><input type="checkbox"/> the drawings, sheets/figs _____</p> <p><input type="checkbox"/> the sequence listing (specify): _____</p> <p><input type="checkbox"/> any table(s) related to sequence listing (specify): _____</p>

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/011273

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims 1, 4, 5, 7-11, 13-16, 20, 24 YESClaims 18, 19 NO

Inventive step (IS)

Claims _____ YES

Claims 1, 4, 5, 7-11, 13-16, 18-20, 24 NO

Industrial applicability (IA)

Claims 1, 4, 5, 7-11, 13-16, 18-20, 24 YES

Claims _____ NO

2. Citations and explanations (Rule 70.7)

Document 1: JP 2001-240411 A (NGK Insulators, Ltd., et al.), 04 September 2001

Document 2: JP 2003-144871 A (Tosoh Corp.), 20 May 2003

The invention set forth in claims 18 and 19 lacks novelty in the light of document 1 cited in the international search report.

Document 1 discloses a tubular zeolite separation membrane wherein the zeolite single crystals have a crystal growth axis that is perpendicular to the surface of the tubular porous support member (refer to claims 1 to 3, paragraphs [0002] and [0010], and the examples).

The inventions set forth in claims 1, 4, 5, 7 to 11, 13 to 16, 20 and 24 do not involve an inventive step in the light of documents 1 and 2 cited in the international search report.

Document 1 does not disclose a feature wherein both the upper end and the lower end of the tubular porous support member that is disposed within the reaction solution are open. However, in the prior art it is common practice to form a zeolite membrane by fluidizing the reaction solution and then bringing the reaction solution into contact with the entire surface of the support

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

member in a uniform manner in order to obtain a uniform membrane, as disclosed in document 2 (refer to paragraph [0022]). As a result, it would have been easy for a person skilled in the art to conceive of configuring the inventions that are set forth in claims 1, 4, 5, 7 to 11, 13 to 16, 20 and 24 by employing such a well-known configuration in the invention that is disclosed in document 1.

Furthermore, the specific manner in which the fluidization of the reaction solution is achieved, the specific manner in which the reaction solution is heated, the specific dimensions for the structure of the equipment and the specific thickness of the grain boundary layer are all features that could have been configured in an appropriate manner by a person skilled in the art, as desired.